

WHAT IS CLAIMED IS:

1 1. A method of modulating abscisic acid signal transduction in a plant,
2 the method comprising introducing into the plant a recombinant expression cassette
3 comprising a promoter operably linked to an ABH1 polynucleotide that modulates ABA
4 signal transduction in a plant; and

5 (a) comprises a sequence at least about 70% identical to SEQ ID NO:1 or
6 (b) that encodes an ABH1 polypeptide having a sequence at least about
7 70% identical to SEQ ID NO:2.

1 2. The method of claim 1, wherein the promoter is a tissue-specific
2 promoter.

1 3. The method of claim 2, wherein the promoter preferentially directs
2 expression in guard cells, thereby decreasing turgor pressure in guard cells in the plant.

1 4. The method of claim 3, wherein the promoter is a KAT1 promoter.

1 5. The method of claim 1, wherein the ABH1 polynucleotide is at least
2 80% identical to SEQ ID NO:1.

1 6. The method of claim 1, wherein the ABH1 polynucleotide is has a
2 sequence as shown in SEQ ID NO:1.

1 7. The method of claim 1, wherein the ABH1 polypeptide has a sequence
2 at least 80% identical to SEQ ID NO:2.

1 8. The method of claim 1, wherein the ABH1 polypeptide has a sequence
2 as shown in SEQ ID NO:2.

1 9. The method of claim 1, wherein the expression cassette is introduced
2 into the plant through a sexual cross.

1 10. The method of claim 1, wherein the expression cassette is introduced
2 into the plant using *Agrobacterium*.

1 11. An isolated nucleic acid molecule comprising an ABH1 polynucleotide
2 that modulates ABA signal transduction in a plant; and

3 (a) comprises a sequence at least about 70% identical to SEQ ID NO:1 or

4 (b) that encodes an ABH1 polypeptide having a sequence at least about
5 70% identical to SEQ ID NO:2.

1 12. The nucleic acid molecule of claim 11, wherein the ABH1
2 polynucleotide is at least 80% identical to SEQ ID NO:1.

1 13. The nucleic acid molecule of claim 11, wherein the ABH1
2 polynucleotide is has a sequence as shown in SEQ ID NO:1.

1 14. The nucleic acid molecule of claim 11, wherein the ABH1 polypeptide
2 has a sequence at least 80% identical to SEQ ID NO:2.

1 15. The nucleic acid molecule of claim 11, wherein the ABH1 polypeptide
2 has a sequence as shown in SEQ ID NO:2.

1 16. The nucleic acid molecule of claim 11, further comprising a promoter
2 operably linked to the ABH1 polynucleotide.

1 17. The nucleic acid molecule of claim 16, wherein the promoter is a
2 tissue-specific promoter.

1 18. The nucleic acid molecule of claim 17, wherein the promoter
2 preferentially directs expression in guard cells.

1 19. The nucleic acid molecule of claim 18, wherein the promoter is a
2 KAT1 promoter.

1 20. A transgenic plant cell comprising an a recombinant expression
2 cassette comprising a promoter operably linked to an ABH1 polynucleotide that modulates
3 ABA signal transduction in a plant; and

4 (a) comprises a sequence at least about 70% identical to SEQ ID NO:1 or

5 (b) that encodes an ABH1 polypeptide having a sequence at least about
6 70% identical to SEQ ID NO:2.

1 21. The transgenic plant cell of claim 20, wherein the promoter is a tissue-
2 specific promoter.

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T0790-986286

1 22. The transgenic plant cell of claim 20, wherein the promoter
2 preferentially directs expression in guard cells.

1 23. The transgenic plant cell of claim 22, wherein the promoter is a KAT1
2 promoter.

1 24. The transgenic plant cell of claim 20, wherein the ABH1
2 polynucleotide is at least 80% identical to SEQ ID NO:1.

1 25. The transgenic plant cell of claim 20, wherein the ABH1
2 polynucleotide is has a sequence as shown in SEQ ID NO:1.

1 26. The transgenic plant cell of claim 20, wherein the ABH1 polypeptide
2 has a sequence at least 80% identical to SEQ ID NO:2.

1 27. The transgenic plant cell of claim 20, wherein the ABH1 polypeptide
2 has a sequence as shown in SEQ ID NO:2.